

NEW SYNONYMS IN THE *MEGASELIA DAHLI* COMPLEX
(DIPTERA: PHORIDAE) AND TWO SPECIES NEW
TO THE BRITISH LIST

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Megaselia dahli (Becker) and its relatives have given rise to much difficulty in the recognition of the species. Colyer (1954) attempted to clarify the identity of *M. dahli* but, as I report below, only added further to the confusion. Schmitz and Beyer (1965) dealt with this complex in their key to the species of their "Gruppe der Crassitarsalen". Couplets 40 - 56 cover the *M. dahli* complex. However this key has proved largely unworkable in practice, apart from the species with highly distinctive features. For example the distinctive flange on the fore metatarsus of *M. cothurnata* Schmitz allows immediate recognition of this species.

In order to make sense of the confusions I have assembled series of slide-mounts of the species of this complex, including re-mounts of a number of types. These have allowed considerable clarification, leading to recognition of misidentifications, new synonyms and two species new to Britain.

***Megaselia dahli* (Becker, 1901)**

Megaselia humilis (Wood, 1909). **Syn. nov.**

Megaselia hibernica (Schmitz, 1938). **Syn. nov.**

Megaselia hyalipennis auctt. nec. (Wood, 1912) misident.

Colyer (1954) reviewed the three 'species' *M. dahli*, *M. humilis* and *M. hibernica*. However the differences reported were trivial and have proved unworkable in practice. Accordingly the lectotype of *M. humilis* has been remounted, along with a specimen of *M. hibernica* collected by Schmitz and labelled "Tullabeg 20.6.39 Ireland". Colyer's remounts of the hind leg, wing and hypopygium of the male "topohyle" (=topotype) of *M. dahli* have been examined. In addition a lectotype for *M. hyalipennis* has been designated and remounted (see under *M. conformis* below).

With these re-mounts and series of slide-mounts of freshly collected specimens it has proved possible to sort the specimens into species on the basis of fine details of the penis complex. One is then able to establish which characters consistently correlate with these different types of penis. Furthermore the small differences in the wings and forelegs reported by Colyer (1954) are found to be totally inconsistent and clearly represent nothing more than intraspecific variation.

Two species can reliably be distinguished from the rest of the complex, in the male sex, by examination of the hind femora. *M. dahli* and *M. pilifemur* (Lundbeck) whose lectotype I have remounted, have almost bristle-like hairs beneath the second quarter to middle third, in

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part arranged in two to three rows (the supplementary rows being on the anterior face) — figs. 1 and 2. In the other species the hairs beneath the hind femur are in a single row and not so crowded (e.g. figs. 3 - 5). *M. dahli* and *M. pilifemur* are distinguished by a number of features including the hairs beneath the hind femur being twice as numerous in *M. dahli* (cf. figs 1 and 2) and there being four or more bristles on the axillary ridge of the wing, in contrast to three or fewer in *M. pilifemur*.

No character has been found that allows separation of *M. humilis* and *M. hibernica* from *M. dahli* and so it must be concluded that these are both synonyms of the latter species.

With clarification of the characters allowing ready recognition of *M. dahli* it is apparent that numerous specimens in museum collections are misidentified. In particular specimens attributed to *M. dahli* by Disney and Davies (1979) and Disney et al (1981) are now found to be *M. hyalipennis*.

***Megaselia conformis* (Wood, 1909)**

Megaselia carpalis (Schmitz, 1919)

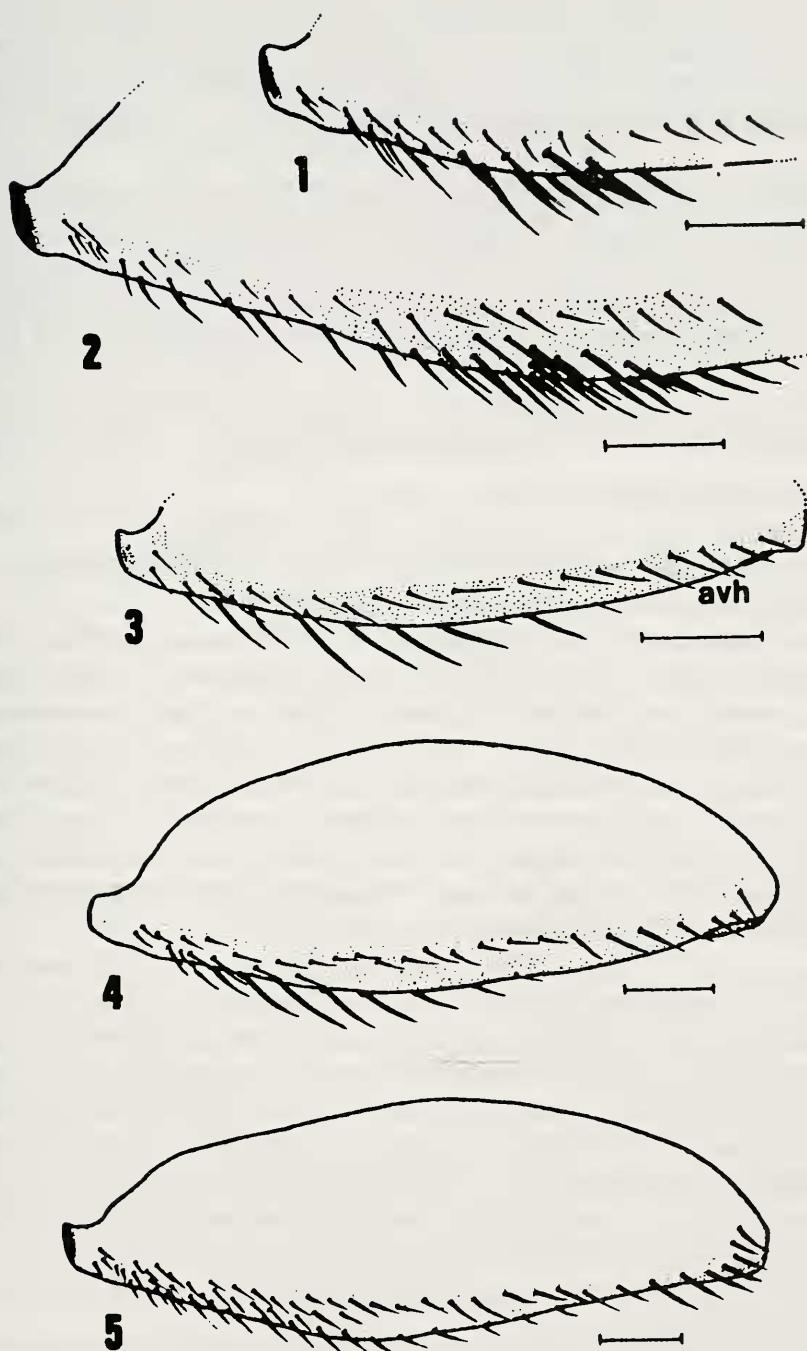
Megaselia hyalipennis auctt. nec (Wood, 1912) misident.

In the keys of Lundbeck (1922) and Schmitz and Beyer (1965) *M. conformis* and *M. hyalipennis* are separated on the colour of their palps. Those of *M. conformis* are supposed to be black and those of *M. hyalipennis* yellow to pale brown. Having remounted co-types of both species, and having designated lectotypes, consistent differences in the penis complex have been discovered. This allows recognition that the palps may be brown to dark brown in *M. conformis*. Furthermore the illustration of the male hypopygium of *M. conformis* given by Schmitz and Beyer (1965, fig. 329) would appear to be of a specimen of *M. hyalipennis*. The dark process of the penis complex is tapered and bare, and has a contrasting pale border in *M. hyalipennis*. In *M. conformis* it is short, rounded and has small denticles. Correlated with these differences is the presence of a short, hairy, posteriorly-directed lobe on the left side of the hypandrium in *M. conformis*, whereas in *M. hyalipennis* this lobe is minute and hairless.

With these clarifications many misidentifications have been revealed. For example the '*M. hyalipennis*' reported visiting flowers (Disney, 1980) have proved to be *M. conformis*.

***Megaselia speiseri* Schmitz, 1929**

This species is keyed out by Schmitz and Delage (1974) at couplet 32 of "Abteilung V". However the text (Schmitz and Delage, 1981) gives the costal cilia as 0.11mm, which would mean the species ought to have run to couplet 14. Furthermore the key erroneously states that the metatarsus of the front leg is "ebenso breit wie f" when it should have read "wie t". Specimens with the costal index up to 0.44 or more would key out in Schmitz's (1958) key to "Abteilung IV, Erste Reihe" at couplet 15, along with *M. intercostata* (Lundbeck), *M. crassipes*



Figs. 1 - 5. Anterior faces of hind femora (in part, or entire in outline only) of males of the *Megaselia dahli*-complex. 1. *M. pilifemur*. 2. *M. dahli*. 3. *M. subcarpalis* (avh = antero-ventral hairs). 4. *M. intercostata*. 5. *M. protarsalis*. (Scale lines = 0.1mm).

(Wood) and *M. subcarpalis* (Lundbeck), (see below). Lundbeck's two species are immediately distinguished by the long hairs beneath the basal half of the hind femur; and *M. speiseri* is distinguished from *M. crassipes* by having more than nine hairs on the left cercus and a strong bristle near the lower margin of the left side of the epandrium in the male.

With these clarifications I am able to report the first two specimens of *M. speiseri* from Britain. The first was collected by Mr D. Lewis at the Charnwood Lodge Reserve, Leicestershire (Grid ref. 43/4615) 2 August 1977. The second was collected by the author at the Craigellachie National Nature Reserve, Inverness (Grid ref. 28/891116) 13/16 July 1982.

This species has previously been recorded from Austria, Poland, Sweden and the Central European part of the USSR.

***Megaselia subcarpalis* (Lundbeck, 1920, p.7).**

Megaselia manicatella (Lundbeck, 1920, p.132) **syn. nov.**

Megaselia sunmanicata (Lundbeck, 1920, p.20) nec Malloch, 1914

Megaselia crassipes auct., nec (Wood, 1909).

I have remounted the lectotypes of both *M. manicatella* and *M. subcarpalis*. There is no doubt that these are the same species. The confusion has arisen because the arbitrary division of *Megaselia* species into those with a "long costa" (costal index 0.44 or more) and those with a "short costa" (costal index less than 0.44) does not allow for species whose range of variation crosses this boundary. Schmitz and Delage (1974) gave the range for *M. manicatella* as 0.40 - 0.43. However the lectotype has an index between 0.44 and 0.45. The lectotype of *M. subcarpalis* has an index between 0.45 and 0.46.

In the keys of Schmitz (1958) both lectotypes run to *M. crassipes* (Wood) in "Abteilung IV. Erste Reihe". However the latter species not only has a distinct posteriorly-directed, hairy lobe from the left side of the hypandrium but also the hairs beneath the basal half of the hind femur are only about as long as the antero-ventral hairs of the apex. In *M. subcarpalis* these hairs are clearly longer (fig. 3), as in *M. intercostata* (Lundbeck) (fig. 4). The latter species keys out with *M. crassipes*. *M. intercostata* differs from *M. subcarpalis* in having hairs, not bristles, on the epandrium, and having four or more bristles on the axillary ridge of the wing. In *M. subcarpalis* there are three or fewer bristles on this ridge.

Schmitz and Beyer (1965) include *M. subcarpalis* in their keys to "Abteilung IV. Zweite Reihe". However these two groups are distinguished on the basis of the length of the costal cilia, with the "Zweite Reihe" having these 0.125mm long or more. In the text, however, these cilia are given as 0.09 - 0.1mm for *M. subcarpalis* (and as 0.08mm for *M. manicatella* — see Schmitz and Delage, 1974 — "Abteilung V"). The reason for not placing *M. subcarpalis* in the

“Erste Reihe” would seem that the cilia look “long”, but (because of the small size of the species) are found to be “short” when actually measured. The same error creates problems at couplet 2 of Schmitz and Delage’s key to “Abteilung V”. Only by going the wrong route (i.e. by pretending it has “long” costal cilia) can one run to *M. manicatella*. The correct route leads to obvious error.

Having clarified the recognition of *M. subcarpalis*, and having established *M. manicatella* as a synonym, it is necessary to justify the presence of this species on the British List. The original basis for its inclusion was a specimen in the Wood collection collected 11 August 1912 at Tarrington, Herefordshire and subsequently identified as “*Megaselia manicatella*”. I have re-mounted this specimen and found it to be *M. crassipes*. However, two males collected by Dr A. G. Irwin at Kirkby Malham, North Yorkshire (Grid ref. 34/890613) in June 1983 have proved to be this species.

***Megaselia valvata* Schmitz, 1935**

nigripalpis Schmitz, ante 1935 nec (Lundbeck, 1920)

This species is close to *M. nigripalpis* (Lundbeck) but lacks the hairy lobe projecting rearwards from the left side of the hypandrium of the latter species. *M. valvata* also resembles *M. protarsalis* Schmitz, which also has short hairs beneath the basal half of the hind femur (fig. 5). However in *M. valvata* the fore tarsus is entirely dark, whereas in *M. protarsalis* the first four segments are somewhat yellowish in contrast to the darkened fifth segment. A distinctive feature of *M. valvata* is that the spine-like hairs at the base of the posterior face of the hind metatarsus are somewhat disordered and some are inclined ventrally (fig. 6). In *M. protarsalis* they are more ordered and are inclined distally as normal (fig. 7).

I have remounted a specimen of *M. valvata* from the Schmitz collection and also the holotype of *M. nigripalpis* in order to check the identity of two males of *M. valvata* collected by P. J. Chandler at Blickling Hall, Norfolk (Grid ref. 63/1828) on 14 October 1983. These represent the first records of this species from Britain. The species has previously been recorded from Austria, Czechoslovakia, Germany, Norway, Poland, Sweden and Finland.

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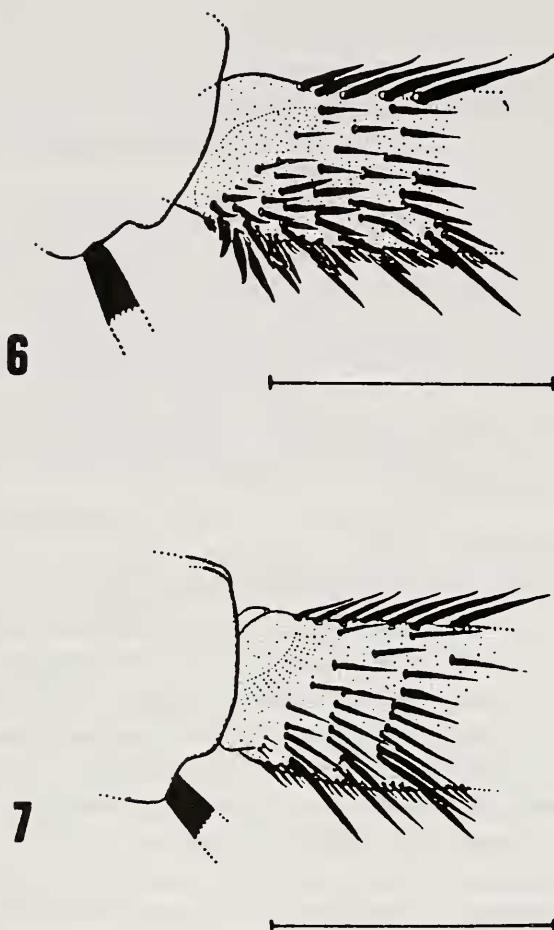


Fig. 6 - 7. Posterior face of base of hind metatarsus in males. 6. *Megaselia valvata*. 7. *M. protarsalis*. (Scale lines = 0.1mm).

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